

# An Open Architecture Scaleable Maintainable Software Defined Commodity Based Data Recorder And Correlator, Phase I

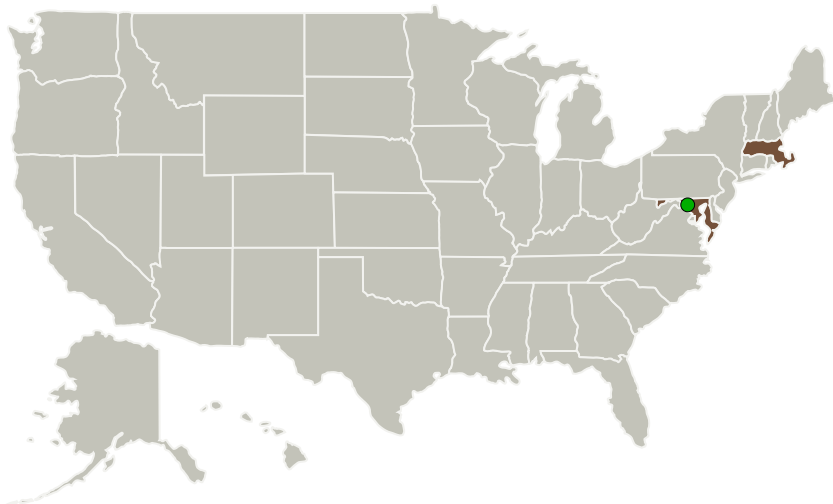
Completed Technology Project (2011 - 2011)



## Project Introduction

This project addresses the need for higher data rate recording capability, increased correlation speed and flexibility needed for next generation VLBI systems. The proposed solution utilizes an innovative software defined platform with standard interfaces to commodity hardware, using advances in multi-core, multi-processing, and graphics processors, technology, combined with streaming data and storage concepts developed in the defense community. The result is an open architecture, commodity hardware based software defined, flexible correlator and data recorder at low cost that provides future scalability and maintainability. The system will have separable well defined components that can be changed over time increasing system life while decreasing maintenance cost. Performance target is to do >8gbps continuous recording, enable 16gbps recording and show even higher speed in burst mode, then provide a feasibility study for a software correlator capable of 32 stations at 16gbps per station, all with commercially off the shelf components

## Primary U.S. Work Locations and Key Partners



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Organizations Performing Work	Role	Type	Location
XCube Communication Inc	Lead Organization	Industry	Westfrod, Massachusetts
 Goddard Space Flight Center(GSFC)	Supporting Organization	NASA Center	Greenbelt, Maryland

Primary U.S. Work Locations	
Maryland	Massachusetts

## Project Transitions

 **February 2011:** Project Start

 **September 2011:** Closed out

### Closeout Documentation:

- Final Summary Chart(<https://techport.nasa.gov/file/138004>)

## Organizational Responsibility

### Responsible Mission Directorate:

Space Technology Mission Directorate (STMD)

### Lead Organization:

XCube Communication Inc

### Responsible Program:

Small Business Innovation Research/Small Business Tech Transfer

## Project Management

### Program Director:

Jason L Kessler

### Program Manager:

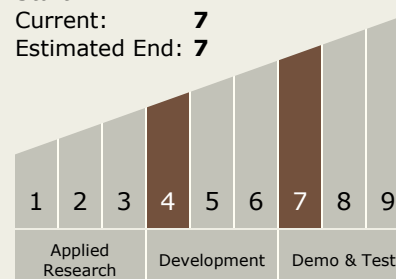
Carlos Torrez

### Principal Investigator:

Mikael B Taveniku

## Technology Maturity (TRL)

Start: 4  
Current: 7  
Estimated End: 7



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## Technology Areas

### Primary:

- TX11 Software, Modeling, Simulation, and Information Processing
  - └ TX11.4 Information Processing
    - └ TX11.4.2 Intelligent Data Understanding

## Target Destinations

The Sun, Earth, The Moon, Mars, Others Inside the Solar System, Outside the Solar System